REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The claims currently at issue in this application are Claims 1-20. Claims 1, 15 and 16 are the only independent claims.

As explained in the prior response, independent Claim 1 is directed to a laminated glazing panel comprising two glass plies, a plastic ply, and one or more light emitting diodes laminated between the glass plies, with the one or more light emitting diodes being mounted on a circuit board.

The Official Action observes that the disclosure in U.S. Patent No. 3,317,906 to *Baldridge*, considered in light of the disclosure in U.S. Patent No. 5,1923,895 to *Naruke et al.*, would have directed one to construct a laminated glazing panel as recited in independent Claim 1. That position is respectfully traversed for at least the following reasons.

Baldridge discloses a windshield laminate 10 provided with instrument indicator devices. The windshield 10 includes a transparent plastic interlayer interposed between a pair of glass panels. The instrument indicator devices in the windshield include signals lights 12a, 12b, oil and generator signal lights 14, 16 and a speed indicating device 18.

As the Official Action correctly notes with respect to Claim 1, *Baldridge* does not disclose one or more light emitting diodes mounted on a circuit board and laminated between glass plies.

As discussed in the prior response, *Naruke et al.* is specifically concerned with the construction of a vehicle door warning light. The warning light is mounted

on the side face C of a vehicle door B and is specifically intended to notify drivers in following vehicles that the vehicle door is open. The warning light includes light emitting elements 5 mounted on a flexible printed circuit board 6. In addition, a light-transmissive elastic sheet 55 covers the light emitting elements 5 to protect the light emitting elements 5 from water.

Contrary to the observation in the Official Action, it is respectfully submitted that a person of ordinary skill in the art would not have been motivated to apply the disclosure in *Naruke et al.* to the windshield disclosed in *Baldridge*. The disclosure in *Naruke et al.* has no relevance to windshields such as disclosed in *Baldridge* or laminating glazing panels such as recited in independent Claim1. Indeed, the focus of the disclosure in *Naruke et al.* is to provide a vehicle door warning light attached to the side face of a vehicle door to warn drivers in following vehicles of the open nature of the door. A person seeking to improve upon the construction of a windshield as disclosed in *Baldridge* would not look to vehicle door warning lights for teachings or possible solutions. In this regard, the discussion in the background portion of *Naruke et al.* provides perspective on the particular problem sought to be addressed by *Naruke et al.*

The background portion of *Naruke et al.* describes known vehicle door warning lights such as illustrated in Fig. 1. Here, *Naruke et al.* points out that known vehicle door warning lights require formation of a hole in the side face of the vehicle door to mount the relatively large light body 63. *Naruke et al.* recognizes that in addition to the difficulties associated with forming the hole in the side face of the vehicle body, the light body 63 occupies space inside the door and thus presents an obstruction to other vehicular equipment such as a power window driver mechanism.

Naruke et al.'s proposal for a vehicle door warning light that consists of a strip of light emitting elements which can be mounted on the side face of the vehicle door in a manner that conforms to the shape of the side face avoids such problems.

One or ordinary skill in the art would readily understand that the problems which *Naruke et al.* seeks to address -- avoiding the need for forming a hole in a vehicle door while also freeing up space inside the door that can be used for other vehicular equipment -- are not at all applicable to vehicle windshields such as disclosed in *Baldridge* or laminated glazing panels such as recited in Claim 1 of the present application. Thus, there exists no reason why an ordinarily skilled artisan would look to the area of vehicle door warning lights for teachings that should be applied to windshields such as disclosed in *Baldridge* or laminated glazing panels such as recited in Claim 1 here.

In addition, nowhere does *Naruke et al.* state as a general proposition that all applications which utilize indicator lights should be replaced with *Naruke et al.*'s disclosure of light emitting elements 5 positioned on a circuit board 6. Thus, there exists no teaching in *Naruke et al.* itself that would motivate one to carry out the modification proposed in the Official Action.

The Official Action notes *Naruke et al.'s* description of advantages associated wit the disclosed strip of light emitting elements -- the light emitting elements 5 reduce power consumption while the flexible printed circuit board allows the warning light strip to conform to the shape of the vehicle door side face. The Official Action relies upon these benefits as the motivation for carrying out the asserted modification. Such reliance is misplaced.

First, *Baldridge* certainly does not recognize that power consumption or conformance to the shape of the windshield are problems in the context of the disclosed indicator devices. And *Naruke et al.* certainly does not recognize that the advantages associated with the construction of the disclosed vehicle door warning light strip can also be realized when applied to windshields.

In addition, in considering *Naruke et al.'s* discussion of the advantages associated with using light emitting diodes, the context in which those advantages are discussed must be considered. In this regard, *Naruke et al.* mentions the reduction in power consumption associated with the use of light emitting elements because the light emitting elements described in *Naruke et al.* replace the large light body 63 previously used in other known vehicle door warning lights as discussed in the background portion of *Naruke et al.* Compared to these large light bodies, the light emitting elements 5 might be said to reduce power consumption. However, *Baldridge's* windshield does not use large light bodies such as those associated with prior know vehicle door warning lights as described in *Naruke et al.* Indeed, by their very nature and the context in which they are used, the lights mentioned in *Baldridge* are rather small and not susceptible to the same power consumption shortcomings as the large vehicle door warning lights mentioned in the background portion of *Naruke et al.* Certainly, *Baldridge* does not describe or otherwise suggest that the signal lights are susceptible to large amounts of power consumption. Thus, no basis exists for concluding that a need exists to reduce power consumption in *Baldridge's* signal lights. Similarly lacking is any teaching or suggestion that the use of *Naruke et al.'s* light emitting elements in place of *Baldridge's* signal lights would reduce power consumption.

In addition, *Naruke et al.* views the flexible nature of the printed circuit board beneficial because it is necessary to adhere or otherwise mount the warning light strip to the side face of the vehicle door as discussed in the first full paragraph of column 5 of *Naruke et al.* That is, the warning light strip should be able to conform to the uneven surface variations along the side face of the vehicle door in order to be properly mounted on the vehicle door. This same concern is not particularly relevant in the case of a laminated glazing as claimed here (or a windshield such as described in *Baldridge*) where the light emitting diodes, mounted on the circuit board, are not adhered in place, but rather are laminated between glass planes. Here, there is little benefit to be derived from conforming the circuit board given the lamination process to which the light emitting diodes, mounted on the circuit board, are subjected.

A still further reason why an ordinarily skilled artisan would not have viewed *Naruke et al.'s* disclosure as relevant to *Baldridge's* windshield or the laminated glazing here is that *Naruke et al.* does not disclose anything to do with laminating one or more light emitting diodes, mounted on a circuit board, between two glass plies. *Naruke et al.* merely describes light emitting elements provided on a printed circuit board and covered by a protective elastic sheet 55.

As discussed in the present application, the inventors here have surprisingly discovered that one or more light emitting diodes mounted on a circuit board and laminated between two glass plies are able to survive the lamination process associated with producing a laminated glazing panel. There is no disclosure in *Naruke et al.*, or *Baldridge*, of two or more light emitting diodes mounted on a circuit board and laminated between two glass plies to form a glazing.

For at least the reasons discussed above, it is respectfully submitted that one or ordinary skill in the art would not have been motivated to apply the disclosure in *Naruke et al.* to the windshield described in *Baldridge*. Further, as noted above, even if such motivation did exist, neither reference teaches one or more light emitting diodes mounted on a circuit board and laminated between two glass plies.

With specific regard to the process recited in independent Claim 16, the arguments set forth above apply equally to this claim. In addition, it is noted that the process for producing a laminated glazing panel as set forth in Claim 16 comprises pairing together two plastic plies, preparing a cut-out area in one plastic ply to receive a circuit board on which is mounted one or more light emitting diodes, positioning the circuit board in the cut-out area, joining a further plastic ply to the paired plastic plies to create a composite ply, and interleaving the composite ply between two glass plies and laminating the plies.

The discussion beginning in line 19 of column 3 of *Baldridge* states that the disclosed windshield is manufactured by interposing an organic plastic interlayer between a pair of pellucid panels, and bonding such assembly together. *Baldridge* goes on to point out that if the indicator component is relatively thin compared to the plastic interlayer thickness, the indicator component can be placed between the plastic interlayer and the glass plate to embed the indicator in the plastic during the subsequent bonding operation. Alternatively, *Baldridge* describes cutting portions of the plastic interlayer to provide a recess for the indicator, or laminating the indicator between two layers of plastic located between the two glass plates.

In these various alternatives, nowhere does *Baldridge* describe positioning a circuit board, on which are mounted one or more light emitting diodes, in a cut-out

area in one plastic ply of a pair of plastic plies, and joining a further plastic ply to the paired plastic plies to create a composite ply which is interleaved between two glass plies. This lack of a disclosure in *Baldridge* of joining a further plastic ply to the paired plastic plies is not remedied by the disclosure in *Naruke et al.*

With respect to independent Claim 15, the arguments set forth above concerning Claim 1 apply here as well. In addition, U.S. Patent No. 4,968,895 to *Leclercq* describes a method of incorporating a photodiode in laminated glass. The photodiode is in the form of a strip of silicon. *Leclercq* points out in lines 45-50 of column 2 that the relatively small dimensions of the silicon strip render the strip quite fragile. To address this, *Leclercq* proposes coating the silicon strip with a plastic that is compatible with the plastic of the interlayer of the laminated glass. Thus, *Leclercq* describes using a plastic coating on the silicon strip to address the fragile nature of the silicon strip. The signal lights in *Baldridge* and the light emitting elements in *Naruke et al.* are not silicon strips and so *Leclercq's* stated reason for using the plastic coating does not apply to *Baldridge's* signal light or *Naruke et al.'s* light emitting elements. In addition, there is no disclosure in *Leclercq*, *Baldridge* or *Naruke et al.* suggesting that the problem which *Leclercq* seeks to address by using the plastic coating is a problem which also exits in the case of light emitting diodes mounted on a circuit board and laminated between two glass plies. There is thus no reason why one of ordinary skill in the art would have found it necessary or useful to employ *Leclercq's* disclosure of a coating on a silicon strip in the case of the already modified arrangement of the windshield disclosed in *Baldridge*.

In addition, Claim 15 recites that the circuit board and one or more light emitting diodes together are at least partially coated with a material compatible with

the material of the plastic ply. *Leclercq* describes applying a coating to a silicon strip, but does not describe that both a light emitting diode and a circuit board should be at least partially coated with a material compatible with the material of the plastic ply.

For at least the reasons set forth above, it is respectfully submitted that the independent claims in this application are allowable.

The dependent claims are allowable at least by virtue of their dependence from allowable independent claims. These dependent claims define additional distinguishing aspects of the claimed subject matter. For example, Claims 12 and 17 recite the one or more light emitting diodes and/or the circuit board being at least partially coated with a material compatible with the material of the plastic ply. The arguments presented above with respect to Claim 15 apply equally to these dependent claims.

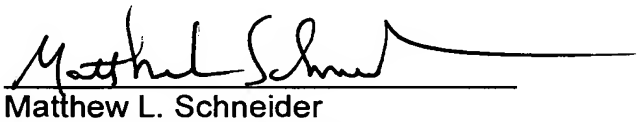
Dependent Claim 7 recites that the flexible circuit board further comprises a rigid layer. Here the Official Action relies upon the disclosure in U.S. Patent No. 6,2020,031 to *Fraivillig*. However, the motivation relied upon in the Official Action for applying *Naruke et al.'s* disclosure to *Baldridge's* windshield is to utilize the flexible characteristics of *Naruke et al.'s* printed circuit board so that the board is able to conform in shape. To modify this already modified windshield to include a rigid layer as suggested in the Official Action is inconsistent with the purported motivation set forth in the Official Action for applying *Naruke et al.'s* disclosure to *Baldridge's* windshield. Thus, this rejection is also improper.

Withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: February 2, 2007 By: 

Matthew L. Schneider
Registration No. 32,814

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620